Novel Radiation Hard CVD Diamond Detectors for Hadron Physics

NoRHDia

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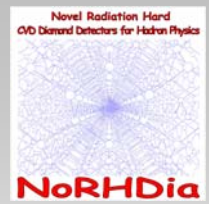
Status I3 Hadron Physics



- Last year of FP6 $\Rightarrow$ 2008
- Final reports preparation

  $\Rightarrow$ Input Deadline November 15, 2008

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① Growth processes → IMPROVED
(talks Saclay / Limburg)

② Time resolution → EXCELLENT
HI < 30 ps, MIP ~ 100ps

③ Rate Capability *(talks FOPI / HADES)* → EXCELLENT; 10^7 - 10^9 pps

④ Energy resolution, A<40 → SIMILAR to Si: $\Delta E/E \sim 0.3\%$

⑤ Energy resolution, A>40 → as MUSIC's: $\Delta E/E \sim 1\%$ (!)

⑥ Radiation Hardness → ENCOURAGING
NOT COMPLETED

Tested up to 10^{16} p,n/cm^2
(talks Uni Karlsruhe / GSI)

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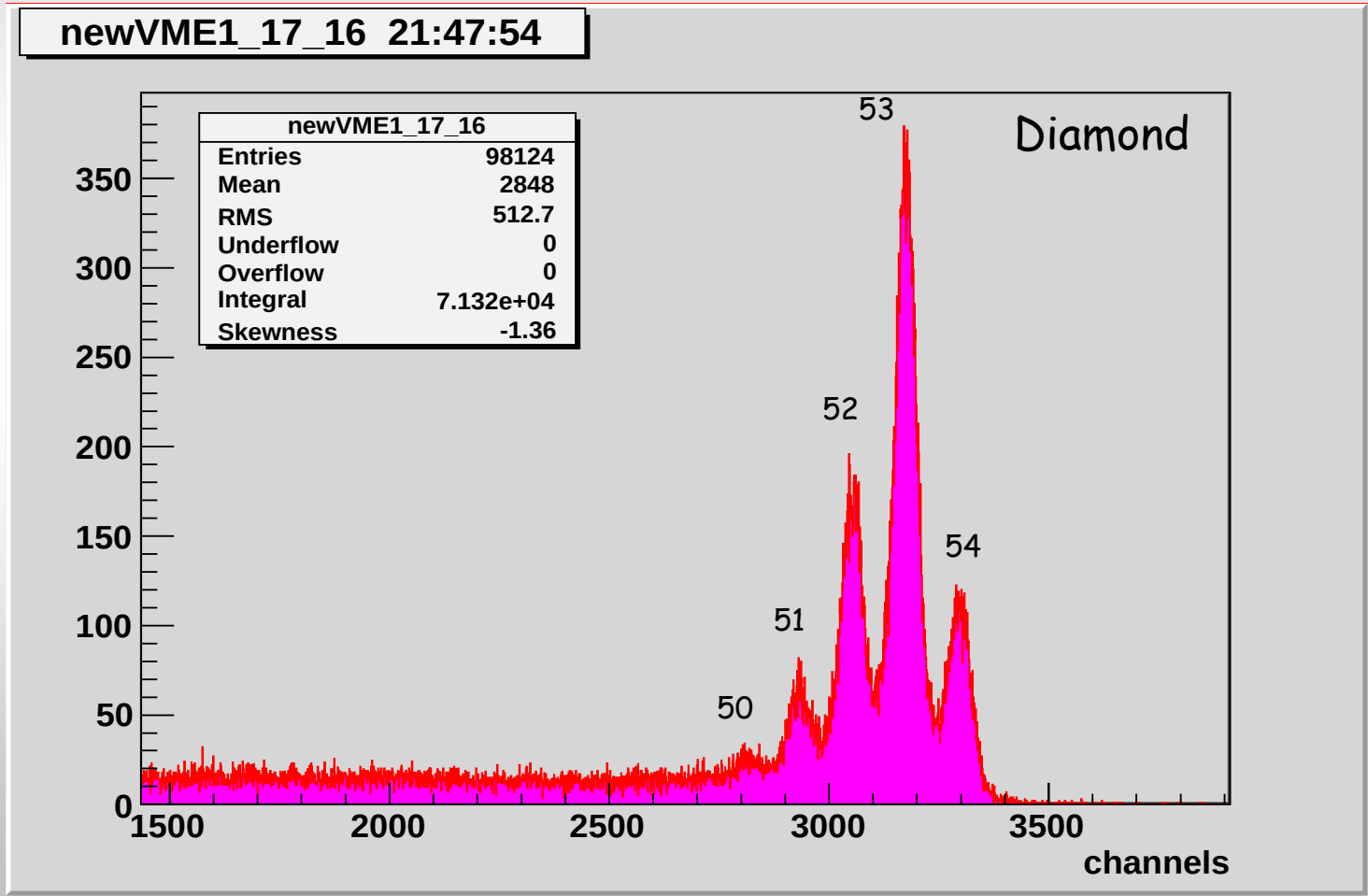
^{134}Xe Fragments, 740AMeV

FRS



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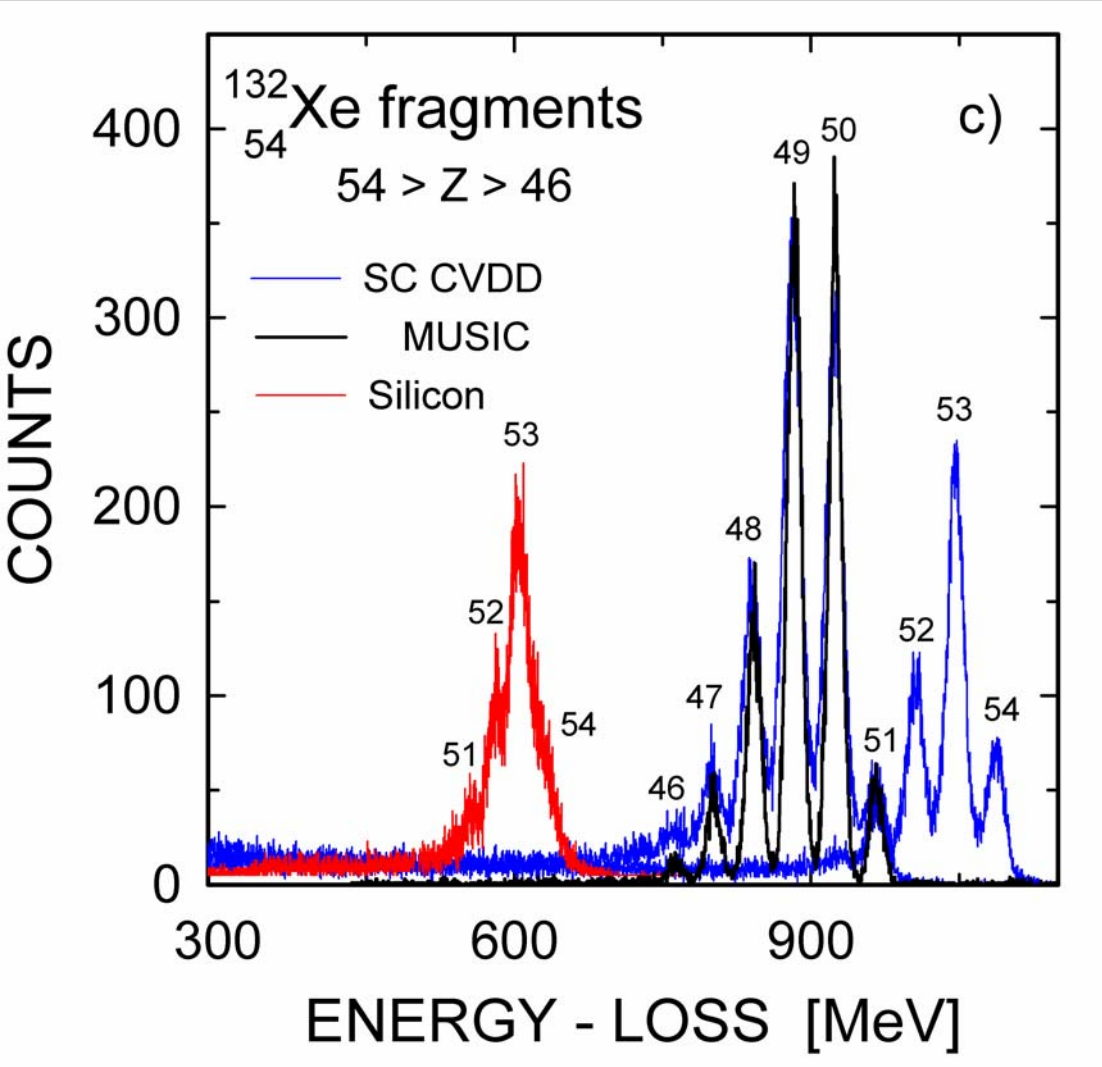

FRS

Relativistic ions:

E-resolution superior to Silicon, and similar to MUSIC chambers !

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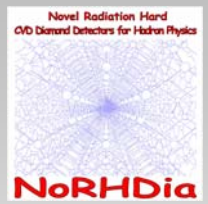
Evaluation of the I3HP Scientific Advisory Comettee

- VERY POSITIVE

The Joint Research Activity 11 ....

- has made substantial advances essential for the next generation of particle and nuclear physics experiments.
- ... a promising potential replacement for the traditional silicon detectors.
- Most interestingly, their radiation hardness .....

Status I3 HadronPhysics2



- The HadronPhysics2 Proposal has been successfully submitted to the European Commission on 26/02/2008.
- You may find the Proposal in our web site: http://www.hadronphysics2.eu
- Evaluation results were expected by the mid of May 2008. However, we are still waiting for ....